SLOVENSKI STANDARD
SIST EN 16370:2013

01-oktober-2013

Kemikalije, ki se uporabljajo za pripravo pitne vode - Natrijev klorid za elektrokemično kloriranje na kraju samem z uporabo membranskih celic

Chemicals used for treatment of water intended for human consumption - Sodium chloride for on site electrochlorination using membrane cells

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumchlorid zur elektrochemischen Erzeugung von Chlor vor Ort mittels Membranzellen

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Chlorure de sodium pour la génération électrochimique de chlore au moyen d'électrolyseurs à membrane

Ta slovenski standard je istoveten z: EN 16370:2013

ICS:

13.060.20	Pitna voda	Drinking water
71.100.80	Kemikalije za čiščenje vode	Chemicals for purification of water

SIST EN 16370:2013 **en,fr,de**

EUROPEAN STANDARD

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ICS 71.100.80

English Version

Chemicals used for treatment of water intended for human consumption - Sodium chloride for on site electrochlorination using membrane cells

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Chlorure de sodium pour la génération électrochimique de chlore au moyen d'électrolyseurs à membrane

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 16370:2013) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this European Standard:

a) this European Standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;

b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE Conformity with this European Standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this European Standard is subject to regulation or control by National Authorities.

1 Scope

This European Standard is applicable to sodium chloride intended for on site electrochlorination of water intended for human consumption using membrane cells. It describes the characteristics and specifies the requirements and the corresponding test methods for sodium chloride (see Annex B). It gives information on its use in water treatment.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 901:2013, *Chemicals used for treatment of water intended for human consumption — Sodium hypochlorite*

EN 973:2009, *Chemicals used for treatment of water intended for human consumption — Sodium chloride for regeneration of ion exchangers*

EN 14805:2008, *Chemicals used for treatment of water intended for human consumption — Sodium chloride for on site electrochlorination using non-membrane technology*

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696)*

ISO 2479, *Sodium chloride for industrial use — Determination of matter insoluble in water or in acid and preparation of principal solutions for other determinations*

ISO 2480, *Sodium chloride for industrial use — Determination of sulphate content — Barium sulphate gravimetric method*

ISO 2482, *Sodium chloride for industrial use — Determination of calcium and magnesium contents — EDTA complexometric methods*

ISO 2483, *Sodium chloride for industrial use — Determination of the loss of mass at 110 °C*

ISO 3165, *Sampling of chemical products for industrial use — Safety in sampling*

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

ISO 6227, *Chemical products for industrial use — General method for determination of chloride ions — Potentiometric method*

ISO 8213, *Chemical products for industrial use — Sampling techniques — Solid chemical products in the form of particles varying from powders to coarse lumps*

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium chloride.

3.1.2 Synonym or common name

Salt.

3.1.3 Relative molecular mass

58,45.

3.1.4 Empirical formula

NaCl.

3.1.5 Chemical formula

NaCl.

3.1.6 CAS Registry Number[1)]

7647-14-5.

3.1.7 EINECS Reference[2)]

231-598-3.

3.2 Commercial forms

The product is available as rock salt, sea salt or evaporated salt, and it is supplied as free-flowing crystals or their compacted forms.

3.3 Physical properties

3.3.1 Appearance

The product is white and crystalline.

3.3.2 Density

The density of the solid crystal is 2,16 g/cm^3 at 20 °C.

The bulk density depends on the particle size distribution.

3.3.3 Solubility (in water)

The solubility of the product depends on the temperature as given in Figure 1.

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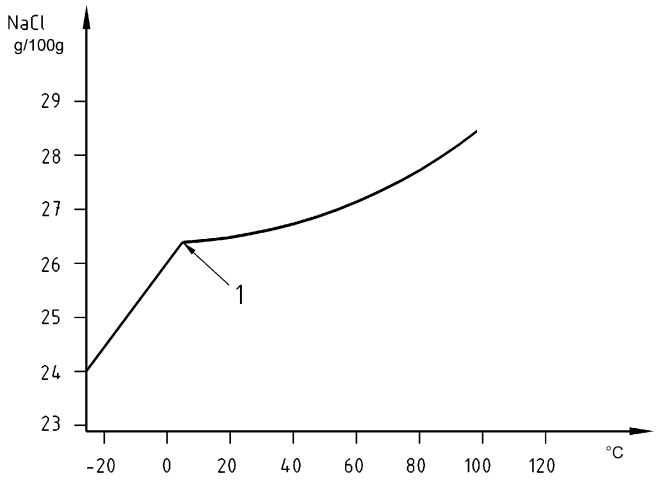
1) Chemical Abstract Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.



Temperature °C	NaCl solution Mass fraction in g/100 g
- 10	25,00
0	26,34
10	26,35
20	26,43
30	26,56
40	26,71
50	26,89
60	27,09
70	27,30
80	27,53
90	27,80
100	28,12

Key

1 Transition point NaCl → NaCl · 2 H_2O

Figure 1 — Solubility curve for sodium chloride in water

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa[3)]

Not applicable.

3.3.6 Melting point

802 °C.

3.3.7 Specific heat

Approximately 850 J/(kg · K) at 25 °C for the solid.

3.3.8 Viscosity (dynamic)

The viscosity of the saturated solution at 20 °C is approximately 1,9 mPa · s.

3.3.9 Critical temperature

Not applicable.

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3) 100 kPa = 1 bar.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

The hardness of solid salt is given as 2 to 2,5 on the Mohs' scale of hardness.

3.4 Chemical properties

Sodium chloride is stable, non-volatile and aqueous solutions have good electrical conductivity.

Sodium chloride reacts with a number of acids (e.g. sulfuric acid, phosphoric acid) and strong oxidising agents. The reactions are often complex and require heat for completion.

NOTE Under certain conditions, a sodium chloride solution can cause corrosion of metallic surfaces.

4 Purity criteria

4.1 General

This European Standard specifies the minimum purity requirements for sodium chloride for on site electrochlorination of water intended for human consumption using membrane cells. The basic quality of the applied salt shall meet the requirements of Codex Alimentarius for Food Grade Salt, because all components of the electrolysed salt are added to drinking water. As the treatment chemical produced by this process is chlorine or sodium hypochlorite, limits have also been calculated from the requirements of EN 901 and of EN 973 under consideration of the demand of minimisation for those impurities commonly present in the product and the chemical parameters. Depending on the raw material and the manufacturing process other impurities may be present and, if so, this shall be notified to the user and when necessary to relevant authorities.

Users of this product should check the national regulations in order to clarify whether it is of appropriate purity for treatment of water intended for human consumption, taking into account raw water quality, required dosage, contents of other impurities and additives used in the product not stated in this product standard.

Limits have been given for impurities and chemical parameters where these are likely to be present in significant quantities from the current production process and raw materials. If the production process or raw materials lead to significant quantities of impurities, by-products or additives being present, this shall be notified to the user.

4.2 Composition of commercial product

The composition of the commercial product shall conform to Table 1.